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Formation of surface layers on articles by treatment in gas discharge plasma - has reaction gases source and thermal emission cathode connected to the anode.

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IPC Class: C23C 14/34 ;

Derwent Classes: M13;

Manual Codes: M13-G02(Apparatus)

Derwent Abstract

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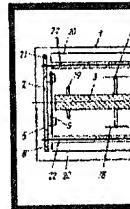
(RU2110606C) The unit has a vacuum chamber (1) which contains an anode (4) and coating material source, made as a solid target (3), connected to individual d.c. sources, coaxial circular plates (2), article holders, fitted on the plates, d.c. sources for the article holders, a mechanism for the articles rotation, plasma forming gas source connected to the vacuum chamber.

The unit has reaction gases source. The thermal emission cathode (5) is connected to a d.c. source. The target is cylindrical and is fixed between the circular plates along their axis. The plates are electrically isolated. The holders are made as two electrically insulated rings (7, 8), each one coaxially connected to the corresponding circular plate. The rings are provided with devices for the cylindrical articles fixing, so that these together with the circular plates and the articles form discharge ignition cylindrical zone. The anode is circular and is fitted coaxially between the circular plates. The diameters of the circular plates and the circular anode are greater than the diameter of the target and are smaller than the discharge ignition cylindrical zone.

The thermal emission cathode is sectional formed by several modules, each one fixed on the circular plate with the incandescent threads located in the space between them along the periphery with a diameter greater than the target diameter and smaller than the discharge ignition cylindrical zone. The rotation mechanism can contact the article fixing devices.

The target is made of one or several metals or metal alloys.

The anode is sectional and has perpendicular rods. The unit can have intermediate anodes, located near the cathode incandescent



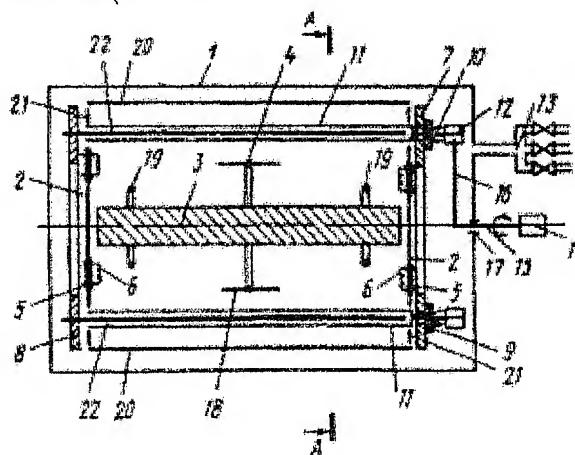
threads and connected to individual d.c. sources. The fixing devices are made as bearings (9) with axles (10). The articles rotation mechanism has an electromagnetic or magnetic drive (14) with rotation axle (15) and transmission element (16), made as a rod. The drive is located in the vacuum chamber.

Use - For protective, optic, decorative and other layers formation on article surfaces.

Advantage - The functional possibilities, coating rate and economic efficiency are increased.

Abstract info: [RU2110606C: Dwg.1/2](#)

Images:



Family:	Patent	Issued	DW Update	Pages	Language	IPC Class
	RU2110606C1 *	May 10, 1998	199849	7	English	C23C 14/34
Local appls.: RU1996000115223 ApplDate:1996-07-25 (96RU-0115223)						

Priority Number(s):

Application Number	Application Date	Original Title
RU1996000115223	July 25, 1996	DEVICE FOR DEPOSITION OF SURFACE LAYER ON ARTICLES BY METHOD OF TREATMENT IN GAS-DISCHARGE PLASMA

Title Terms: FORMATION SURFACE LAYER ARTICLE TREAT GAS DISCHARGE PLASMA RE GAS SOURCE THERMAL EMIT CATHODE CONNECT DC SOURCE

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